

**Commonwealth of Kentucky**  
**Division for Air Quality**  
***PERMIT STATEMENT OF BASIS***

(DRAFT)

Conditional Major, Operating

Permit: F-08-009

Polymer Partners, LLC

Henderson, KY 42420

February 18, 2008

Durga Patil, Reviewer

SOURCE ID:	21-101-00125
AGENCY INTEREST:	1831
ACTIVITY:	APE20080001

**SOURCE DESCRIPTION:**

Polymer Partners (previously named Clariant) located at 1450 Commonwealth Drive, Henderson, Kentucky, manufactures black plastic color concentrates through a process of compounding various polymer resins with carbon black, calcium carbonate and/or other filler materials. Physical processes taking place include pneumatically feeding raw materials from silos and dump stations equipped to handle super sacks of carbon black and plastic resins into hoppers on the compounding lines. Thermal processes include the heating of the polymer resin and additives to product specific temperatures and mixing in the compounding line. The finished product is fed to a pelletizer and dewatering system.

The source is currently classified as conditional major. The source has applied for permit renewal for conditional major status under 401 KAR 52:030, federally enforceable permits.

Over the years the company has undergone a number of changes. The initial permit was issued in September 1997 (F-97-008). Then due to modifications in the plant, the company applied for and secured a significant modification permit to the original conditional major permit (F-97-008 R1) in December 1999. The modifications included the addition of a new production line "Line 23" which is to be primarily used for research and development. This modification added three new emission points: a polymer dump station; a polymer feed station; and a Ferrel continuous mixer. There was also a relocation of the 100 and 300 cubic feed ribbon blenders resulting in two additional emission points in process room #2. The permit was renewed in August 2003 (F-03-012). Along with the renewal application, changes were made with the addition of two additive stations for the #6 and #9 FCM mixers and the removal of the 300 cu. ft. ribbon blender, the removal of the ZSE-50 twin screw line, the replacement of the Batenfil lab molding machine with a Boy unit lab molding machine and the addition of a cook off as an insignificant activity. In March 2007, the permit underwent a minor revision (F-03-012 R1) with the addition of new facilities (PR-45-2 and #63) and an increase in the process rates in existing facilities. The present renewal (F-08-009) has no process changes to the F-03-012 R1 Permit.

The following table describes the different emission points present at the facility.

Emission Point	Process Name	Basis for PTE	Construction Date
001-01	CP-45 FCM Dump Station	1000 lbs/hr of material process rate	August 1997
001-02	CP-45 FCM Feed Station	1000 lbs/hr of material process rate	August 1997
001-03	CP-45 FCM	1000 lbs/hr of material process rate	August 1997
001-04	#6 FCM Dump Station	2000 lbs/hr of material process rate	Feb.1998
001-05	#6 FCM Additive Station	2000 lbs/hr of material process rate	Feb. 1998
001-06	#6 FCM Feed Station	2000 lbs/hr of material process rate	Feb. 1998
001-07	#6 FCM	2000 lbs/hr of material process rate	Feb. 1998
001-08	#9 FCM Dump Station	8000 lbs/hr of material process rate	March 1998
001-09	#9 FCM Additive Station	8000 lbs/hr of material process rate	March 1998
001-10	#9 FCM Feed Station	8000 lbs/hr of material process rate	March 1998
001-11	#9 FCM	8000 lbs/hr of material process rate	March 1998
001-12	Blending Silo #1	8000 lbs/hr of material process rate	August 1997
001-13	Blending Silo #2	8000 lbs/hr of material process rate	August 1997
001-14	Schick Loading Hopper	8000 lbs/hr of material process rate	August 1997
001-15	Finished Product Load Station #1	8000 lbs/hr of material process rate	August 1997
001-16	Finished Product Load Station #2	8000 lbs/hr of material process rate	August 1997
002-01	Line 23 Dump Station	500 lbs/hr of material process rate	August 1997
002-02	Line 23 Feed Station	500 lbs/hr of material process rate	August 1997
002-03	Line 23 FCM	500 lbs/hr of material process rate	August 1997
002-04	100 cu ft Ribbon Blender	6000 lbs/hr of material process rate	August 1997
002-05	PR-45-2 FCM Dump Station	1000 lbs/hr of material process rate	proposed 2008
002-06	PR-45-2 FCM Feed Station	1000 lbs/hr of material process rate	proposed 2008
002-07	PR-45-2 FCM	1000 lbs/hr of material process rate	proposed 2008
002-08	#63 Twin Screw Dump Station	1000 lbs/hr of material process rate	proposed 2008
002-09	#63 Twin Screw Feed Station	1000 lbs/hr of material process rate	proposed 2008
002-10	#63 Twin Screw mixer	1000 lbs/hr of material process rate	proposed 2008
003-01	Six (6) Outdoor Silos	44000 lbs/hr of material process rate	August 1997
004-01	Rail Car Unloading	5000 lbs/hr of material process rate	August 1997
-	Pneumatic conveying system	Insignificant Activity	-
-	Boy 22T lab molding machine	Insignificant Activity	-
-	Cook off oven	Insignificant Activity	-
-	Scrap Re-grinder	Insignificant Activity	2006
-	55 lb Bagger	Insignificant Activity	2006

\*Note: 001 – Process Room #2, 002 – Process Room #1, 003 – Six Outdoor Silos, and 004 – Rail Car Unloading,  
FCM – Ferrel continuous mixer

**COMMENTS:****Type of control and control efficiency for different emission points and emissions**

<b>Emission Point</b>	<b>Type of Emission</b>	<b>Type of control, &amp; control efficiency</b>
001-01	Carbon Black & PM=PM <sub>10</sub>	Two filter units w/ bank of six filters with secondary baghouse control, 99.9% removal
001-02	Carbon Black & PM=PM <sub>10</sub>	Two filter units w/ bank of six filters with secondary baghouse control, 99.9% removal
001-03	HAP/VOC	None
001-04	Carbon Black & PM=PM <sub>10</sub>	Two filter units w/ bank of six filters with secondary baghouse control, 99.9% removal
001-05	PM=PM <sub>10</sub>	Two filter units w/ bank of six filters with secondary baghouse control, 99.9% removal
001-06	Carbon Black & PM=PM <sub>10</sub>	Two filter units w/ bank of six filters with secondary baghouse control, 99.9% removal
001-07	HAP/VOC	None
001-08	Carbon Black & PM=PM <sub>10</sub>	Two filter units w/ bank of six filters with secondary baghouse control, 99.9% removal
001-09	PM=PM <sub>10</sub>	Two filter units w/ bank of six filters with secondary baghouse control, 99.9% removal
001-10	Carbon Black & PM=PM <sub>10</sub>	Two filter units w/ bank of six filters with secondary baghouse control, 99.9% removal
001-11	HAP/VOC	None
001-12	PM=PM <sub>10</sub>	Dacron polyester baghouse, 99.9% removal
001-13	PM=PM <sub>10</sub>	Dacron polyester baghouse, 99.9% removal
001-14	PM=PM <sub>10</sub>	None
001-15	PM=PM <sub>10</sub>	None
001-16	PM=PM <sub>10</sub>	None
002-01	Carbon Black & PM=PM <sub>10</sub>	Polyester felt filter bags, 99.9% removal
002-02	Carbon Black & PM=PM <sub>10</sub>	Polyester felt filter bags, 99.9% removal
002-03	HAP/VOC	None
002-04	PM=PM <sub>10</sub>	None
002-05	Carbon Black & PM=PM <sub>10</sub>	Two filter units w/ bank of six filters with secondary baghouse control, 99.9% removal
002-06	Carbon Black & PM=PM <sub>10</sub>	Two filter units w/ bank of six filters with secondary baghouse control, 99.9% removal
002-07	HAP/VOC	None
002-08	Carbon Black & PM=PM <sub>10</sub>	Two filter units w/ bank of six filters with secondary baghouse control, 99.9% removal
002-09	Carbon Black & PM=PM <sub>10</sub>	Two filter units w/ bank of six filters with secondary baghouse control, 99.9% removal
002-10	HAP/VOC	None
003-01	PM=PM <sub>10</sub>	Dacron polyester filter baghouse, 99.9% removal
004-01	Carbon Black & PM=PM <sub>10</sub>	Dacron polyester filter baghouse, 99.9% removal

**\*Note: 001 – Process Room #2, 002 – Process Room #1, 003 – Six Outdoor Silos, and 004 – Rail Car Unloading**

**EMISSION FACTORS AND THEIR SOURCE:**

AP 42 Volume 1: Stationary point sources, Fifth edition, Section 6.6.2 Plastics, was used to estimate emission factors for uncontrolled plastic resins during different processing operations and then engineering estimate based on maximum amount of plastics processed was used to calculate emission factors for controlled plastic resin emissions. Engineering estimate using maximum amount of carbon black that can be fed into the different emission points was used to estimate emission factors for controlled carbon black emissions.

**APPLICABLE REGULATIONS:**

401 KAR 59:010, New process operations, applies to the above emission points because these are process operations that were commenced after July 2, 1975 and are not subject to another emission standard with respect to particulates in the above mentioned chapter.

401 KAR 52:030, Federally enforceable permits for non-major sources

401 KAR 63:020, Potentially hazardous matter or toxic substances

**EMISSION AND OPERATING CAPS DESCRIPTION:**

The actual emission of HAPS for a single pollutant is limited to stay below 9.0 tons per year. The combined emissions for HAPs are limited to stay below 22.5 tons per year. The actual VOC emissions are limited to stay below 90.0 tons per year. Emission limitations for particulate matter are pursuant to regulation 401 KAR 59:010, Section 3 (2). Compliance with annual limitations is based on emissions from any consecutive twelve-month period for the entire source.

**PERIODIC MONITORING:**

Emission testing protocol, test data and results determining PM<sub>10</sub> and HAP emissions identified in the application are to be maintained on site for the life of the source. These tests shall be evaluated every five years for applicability and accuracy or any time a new type of product involving compounds not detailed in this application for this emission point is manufactured /processed. Actual HAP and PM<sub>10</sub> emissions are to be determined on a monthly basis using internal emission factors which incorporate the control device efficiency. This data is to be kept on site for five years from the date collected.

The pressure drop gauges on the fabric filters and baghouses will be monitored daily to ensure proper operation of the devices. The pressure drop across each device will be maintained in accordance with manufacturer specifications and a written daily log of the pressure drop will be kept. Records of this data, with all deviations from permit requirements clearly identified, will be submitted to the Division semiannually.

Monthly reports generated from the above logs may be used to demonstrate compliance with the annual specified production rates and annual emissions. Monthly summary reports and logs shall be submitted to the Division semiannually to demonstrate compliance and upon request.

**OPERATIONAL FLEXIBILITY:**

None

**CREDIBLE EVIDENCE:**

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has only adopted the provisions of 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12 into its air quality regulations.